



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,213	06/20/2006	Carmen Martin Rivera	57906US004	4511
32692	7590	03/02/2010		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
			EXAMINER	
			COLE, ELIZABETH M	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			03/02/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com  
LegalDocketing@mmm.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/554,213	<b>Applicant(s)</b> MARTIN RIVERA ET AL.
	<b>Examiner</b> Elizabeth M. Cole	<b>Art Unit</b> 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 29 October 2009.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 21-34 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 21-34 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/28741. WO '741 discloses an abrasive article comprising a very low density nonwoven web, (page 7, lines 1-8), which can be formed by air laying, (page 6, line 18) and which is bonded at the crossover points of the fibers, (page 6, lines 17-20). A make coat resin is applied to the nonwoven and then abrasive particles are applied to the coated nonwoven, (page 8, lines 24-32). Suitable sizes for the abrasive particles are 60 microns or less. See page 2, lines 30-32. The web may be made of natural fibers. See page 5, lines 12-13. The natural fibers can be jute, cotton or hemp fibers. See page 5, lines 12-13. With regard to the claims as amended, since WO '741 clearly teaches that the nonwoven web can be made of natural fibers, it is reasonable to expect that the majority or more than 50% of the fibers would be natural fibers, since WO '741 teaches webs made of natural fibers, polymeric fibers or mixtures thereof. Thus, WO '741 teaches three embodiments wherein one would be a web made of natural fibers which would meet the claimed amount of at least 50% natural fibers. The resin for the make coat resin can be thermoset or thermoplastic and may comprise a phenolic resin. Useful abrasive particles include inorganic materials such as aluminum oxide having a diameter of 30-60 microns, polymeric materials such as thermosetting or thermoplastics materials and natural particles such as nut shells. See page 12, line 26 – page 13, line

8. Suitable thicknesses for the abrasive web can be 1-50 mm. See page 8, lines 1-3.

While WO '741 differs from the claimed invention because it does not disclose the density of the nonwoven in terms of kilograms per cubic meter, WO '741 does clearly disclose that the nonwoven should have a very low density with a high void volume of about 75% to about 95%. The void volume and the density are inversely related, in that a material having a high density would have a low void volume and a material having a low density would have a high void volume. WO '741 teaches employing a high void volume in order to product a material which has a high abrasive rate and which has a decreased tendency to clog up which reduces the abrasive rate and hinders cleaning of the web by flushing. Therefore, it would have been obvious to one of ordinary skill in the art at the time at the time the invention was made to have selected the desired void volume and thus the desired density through the process of routine experimentation in order to arrive at a material having sufficient strength and a decreased tendency to clog up which reduces the abrasive rate and hinders cleaning of the web by flushing.

3. Applicant's arguments filed 10/29/09 have been fully considered but they are not persuasive. Applicant argues that WO '741 does not give any guidance or specifics as to the amount and quantity of natural fibers that may be used. However, WO '741 clearly teaches that the nonwoven web can be made of natural fibers, and therefore it is reasonable to expect that the majority or more than 50% of the fibers would be natural fibers, since WO '741 teaches webs made of natural fibers, polymeric fibers or mixtures thereof. Thus, WO '741 teaches three embodiments, a web made of natural fibers, a web made of polymeric fibers and a web made of a mixture of fibers. At least the web

made of natural fibers would meet the claimed amount of at least 50% natural fibers. Therefore, the rejection is maintained.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

*/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1794*